Brief Overview of Covid-19 Vaccines

Progressive Labor Party
Healthcare Workers' Committee

PREFACE

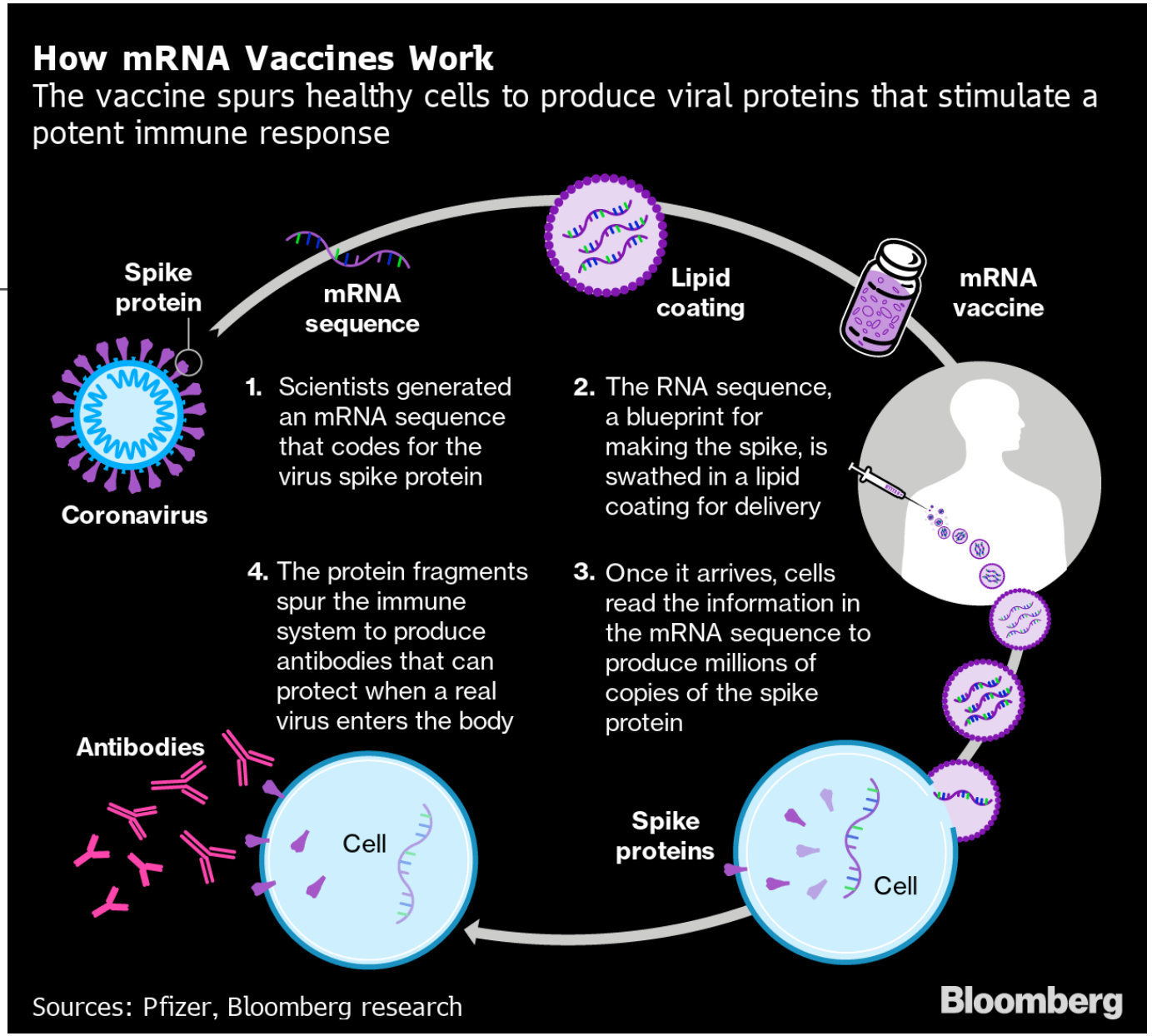
As long as we live in a capitalist society, pandemics are inevitable and becoming more frequent. They are the result of the tireless drive for maximum profits: food animals are crowded together in genetically homogenous herds which allow virulent viruses to flourish, mining and other industries and the growth of impoverished areas around cities push workers into contact with viruses previously limited to forests. As the living conditions of the working class and the environment are destroyed, public health disasters and the inability to meet them increase. While millions of working people are fighting for their lives and relying on the advent of a vaccine, we as communists in Progressive Labor Party understand that the capitalists' motivations behind this race for a vaccine are not the same as ours. Capitalism requires a minimum laboring force that is healthy enough to be exploited while millions die. Rival capitalist countries will use vaccine access as a tool in their inter-imperialist competition to control and ally with developing countries. COVID-19 is a consequence of global capitalism and if we are ever to live in a world pandemic-free, we need to overthrow capitalism with communist revolution.

This talk is a brief overview of the current vaccines and a call for campaigns to be involved in as Progressive Labor Party members and communist health activists expose the root causes of capitalism to build a base for revolution.

mRNA vaccine mechanism

Messenger RNA (mRNA) is a tiny bit of genetic material that encodes for the SARS-CoV-2 Spike protein. This mRNA is put into a complex lipid delivery system in order to stabilize it. You then inject this into the muscle and it's taken up by the muscle cells. The lipid melts away and the ribosomal system translates the mRNA into the SARS-CoV-2 spike protein. The spike protein gets displayed on the outside of the muscle cell and then your immune system makes antibodies to the protein.

mRNA is very quickly degraded. In fact the problem with previous mRNA vaccines is keeping the mRNA stabilized so that it doesn't get degraded before it is translated.


How mRNA Vaccines Work
The vaccine spurs healthy cells to produce viral proteins that stimulate a potent immune response
Spike protein
Coronavirus
mRNA sequence
Lipid coating
mRNA vaccine
1. Scientists generated an mRNA sequence that codes for the virus spike protein
2. The RNA sequence, a blueprint for making the spike, is swathed in a lipid coating for delivery
3. Once it arrives, cells read the information in the mRNA sequence to produce millions of copies of the spike protein
4. The protein fragments spur the immune system to produce antibodies that can protect when a real virus enters the body
Antibodies
Cell
Spike proteins
Cell
Sources: Pfizer, Bloomberg research
Bloomberg

Pfizer vs Moderna

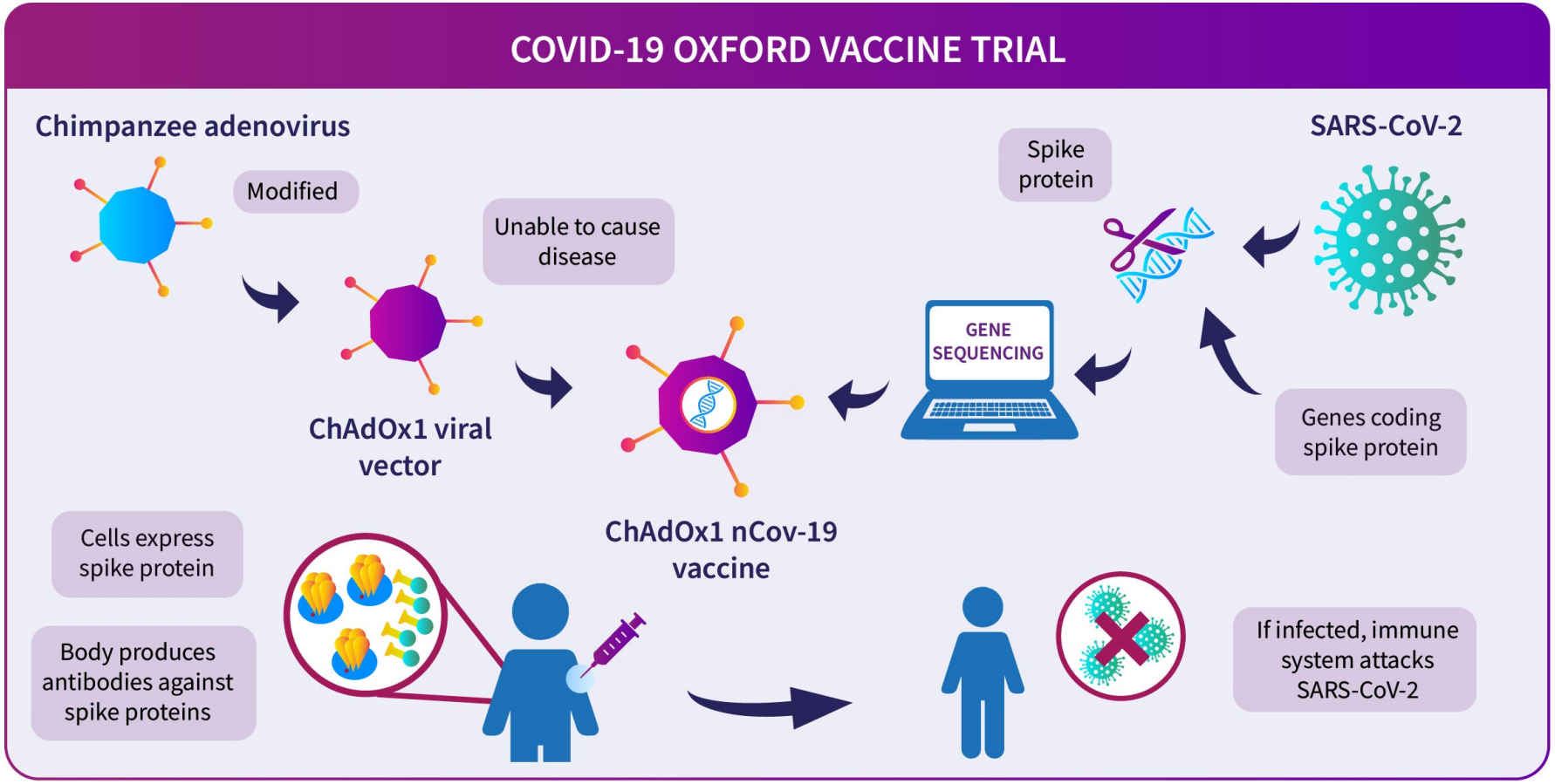
Pfizer

- mRNA vaccine, 2 doses required 3 weeks apart
- 44,000 people in phase 3 study, over 90% efficacy (at one week after second dose)
- 30% of US workers and 42% of international workers had “racially and ethnically diverse backgrounds”
- Stored ultra cold, then thawed (can be kept in refrigerator for up to 5 days), then diluted and must be administered within 6 hours of dilution

Moderna

- mRNA vaccine, 2 doses required 4 weeks apart
- 30,000 people in phase 3 study, 94% efficacy for covid, 100% efficacy for severe covid (at two weeks following the second dose)
- Included 7000 workers >65yo, 5000 workers under 65 with high risk conditions
- 6000 Latinx workers and 3000 Black workers
- stable at refrigerator temp for 30 days

Adenovirus vector vaccines



AstraZeneca, aka Oxford vaccine

- Adenovirus vector vaccine
- Two dosing arms
  - 1st dose ½ strength, 2nd dose full strength. 2700 workers, 90% efficacy
  - 1st and 2nd doses at full strength, 8800 workers. 62% efficacy
  - Overall combined, Doses were at least 4 weeks apart. 70% efficacy (at 2 weeks after second dose)
- Anyone with any symptoms was swabbed for coronavirus (true for all the vaccines mentioned here) but in this trial they also swabbed participants weekly even if no symptoms
- Stored and handled at normal refrigerator temps for up to 6 months

Safety concerns

- FDA insisted that these companies wait at least two months after the 2nd dose to look for adverse events. Is that enough time? Short answer: yes for serious adverse events like Guillain-Barre or transverse myelitis.
- Can the vaccine make the person more susceptible to the virus? (Vaccine-induced enhancement or antibody dependent enhancement/ADE)
  - The numbers so far have not shown this
  - On a population level with covid-19 we have not seen this. In the few cases of possible reinfections, the disease has not been more severe the second time.
- Injection site reactions are common. Generalized malaise, fatigue, redness, soreness and fever are more common after second dose.

Efficacy

- How long will immunity last? **Unknown at this time.**
- Can people still get infected and transmit the virus? **Unknown.** "Sterilization immunity" will be under study by University of Washington as the vaccines are rolled out.
- How many people need to be vaccinated to get the pandemic under control? **Not clear.**
  - If you have a vaccine that is 90% effective and the Ro is 2 (Ro is number of people the average infected person infects), then you would need to vaccinate 55-60% of the population. But that assumes 90% effectiveness against a significant amount of shedding which is still under investigation.
  - Given more contagious strains, we may need 75-90% vaccination rates
- Need booster in a year? **Unknown.** Good news is that this virus doesn't seem to mutate much in terms of the spike protein so it seems we will not need to have a vaccine for multiple strains each year (as we do with the flu).

Assure Equity in Vaccine Distribution

Vaccine should be distributed to those at highest risk of contracting and dying from covid-19. Black and Brown workers in all groups are more severely impacted and so prioritizing them is part of the fight against racism. Vaccine administration should be prioritized internationally where there is greatest need, not greatest profit.

Under communism there would be international cooperation to develop vaccines without regard to profit, as well as rapid and sufficient effort to make all supplies necessary to manufacture, distribute, and administer vaccines. Equitable international distribution with international production would be assured.

<u>Workers who should be prioritized for vaccine administration:</u>

- Workers who work in long term care facilities and the residents of these facilities.
- Hospital workers who work with COVID-19 patients. (Includes: nurses, doctors, other providers, housekeeping, dietary staff, respiratory therapists and physical therapists, etc.)
- Essential workers already known to be at high risk including workers in meat packing plants, grocery stores, amazon warehouses, transportation, and agricultural workers.
- Incarcerated workers within jails, prisons and detention centers where the epidemic is raging.
- Undocumented workers
- Elderly workers
- Homeless workers
- Workers with underlying health conditions

Attack Racist, Capitalist Determinants of Health

Attacking structural racism requires aggressive action.

- #Free them all. Release prisoners from jails, prisons and detention centers and provide safe support once released.
- House the homeless immediately. Oppose evictions. Connect with substance users and expand programs.
- Demand that Native Americans receive vaccinations and medical staff to get the job done.
- Expand or start outreach programs to reach the communities most affected by COVID-19 who may not have health care access, insurance or information. Guarantee vaccination appointments for these residents.
- Overcome fears and distrust due to racism to reach Black, Latinx, Asian and Native Americans in order to offer protection from COVID-19.
- Recognize that Pfizer and Pharma will design their distribution to maximize their profits in the United States and worldwide but appreciate the efforts of millions of hard working laboratory staff, scientists, clinicians and public health workers who are truly fighting for the health of the working class and trying to control this virus.

Important Concerns Going Forward

- **Education** of workers on how the vaccines work and their importance is needed because many (with good historical and current reasons) don't trust medical institutions or the government.
  - Ways to do this would be doing education through the public schools, and engaging with community leaders to help teach and encourage vaccination.
- **Transparency** about risks and benefits is very important, especially as more data comes out. Right now it appears that the risks of the vaccine are much less than the risks of serious harm or death due to Covid-19 but if this changes, we must make sure workers know.
- **Surveillance** is a concern around tracking outcomes and workers as these vaccines are rolled out. We need continuous data to make sure these vaccines are safe and effective. We must also make sure workers are protected from the police and ICE. We may have to oppose the CDC data requirements.
- **Good public health practice must continue**. Workers need to continue masking and physical distancing and hand-washing even after vaccination until we know whether vaccinated workers can acquire and transmit the virus.

Continue the Conversation

- This slide set was made the second week of December 2020. This is a rapidly evolving area as more data and information comes out on a weekly basis.
- If you have questions, want to discuss new information, or want to join a political public health study group, please reach out to us by emailing us through the website below.
- For more articles and information, go to www.plp.org
- To donate in order to support our political work through Cash.app: $plpchallenge
- Recent PLP Public Health Panel Discussion "Racism & Capitalism: Is Communism the Solution?" is here: https://linktr.ee/plpchallenge
- Recent PLP Public Health Leaflet: https://rb.gy/cgyofg.

Join the Revolutionary Communist

PROGRESSIVE LABOR PARTY

OUR FIGHT

- Progressive Labor Party (PLP) fights to destroy capitalism and the dictatorship of the capitalist class. We organize workers, soldiers and youth into a revolutionary movement for communism.
- Only the dictatorship of the working class — communism — can provide a lasting solution to the disaster that is today's world for billions of people. This cannot be done through electoral politics, but requires a revolutionary movement and a mass Red Army led by PLP.
- Worldwide capitalism, in its relentless drive for profit, inevitably leads to war, fascism, poverty, disease, starvation and environmental destruction. The capitalist class, through its state power — governments, armies, police, schools and culture — maintains a dictatorship over the world's workers. The capitalist dictatorship supports, and is supported by, the anti-working-class ideologies of racism, sexism, nationalism, individualism and religion.
- While the bosses and their mouthpieces claim "communism is dead," capitalism is the real failure for billions worldwide. Capitalism returned to Russia and China because socialism retained many aspects of the profit system, like wages and privileges. Russia and China did not establish communism.
- Communism means working collectively to build a worker-run society. We will abolish work for wages, money and profits. Everyone will share in society's benefits and burdens.
- Communism means abolishing racism and the concept of "race." Capitalism uses racism to super-exploit black, Latino, Asian and indigenous workers, and to divide the entire working class.
- Communism means abolishing the special oppression of women — sexism — and divisive gender roles created by the class society.
- Communism means abolishing nations and nationalism. One international working class, one world, one Party.
- Communism means that the minds of millions of workers must become free from religion's false promises, unscientific thinking and poisonous ideology. Communism will triumph when the masses of workers can use the science of dialectical materialism to understand, analyze and change the world to meet their needs and aspirations.
- Communism means the Party leads every aspect of society. For this to work, millions of workers — eventually everyone — must become communist organizers. Join Us!